

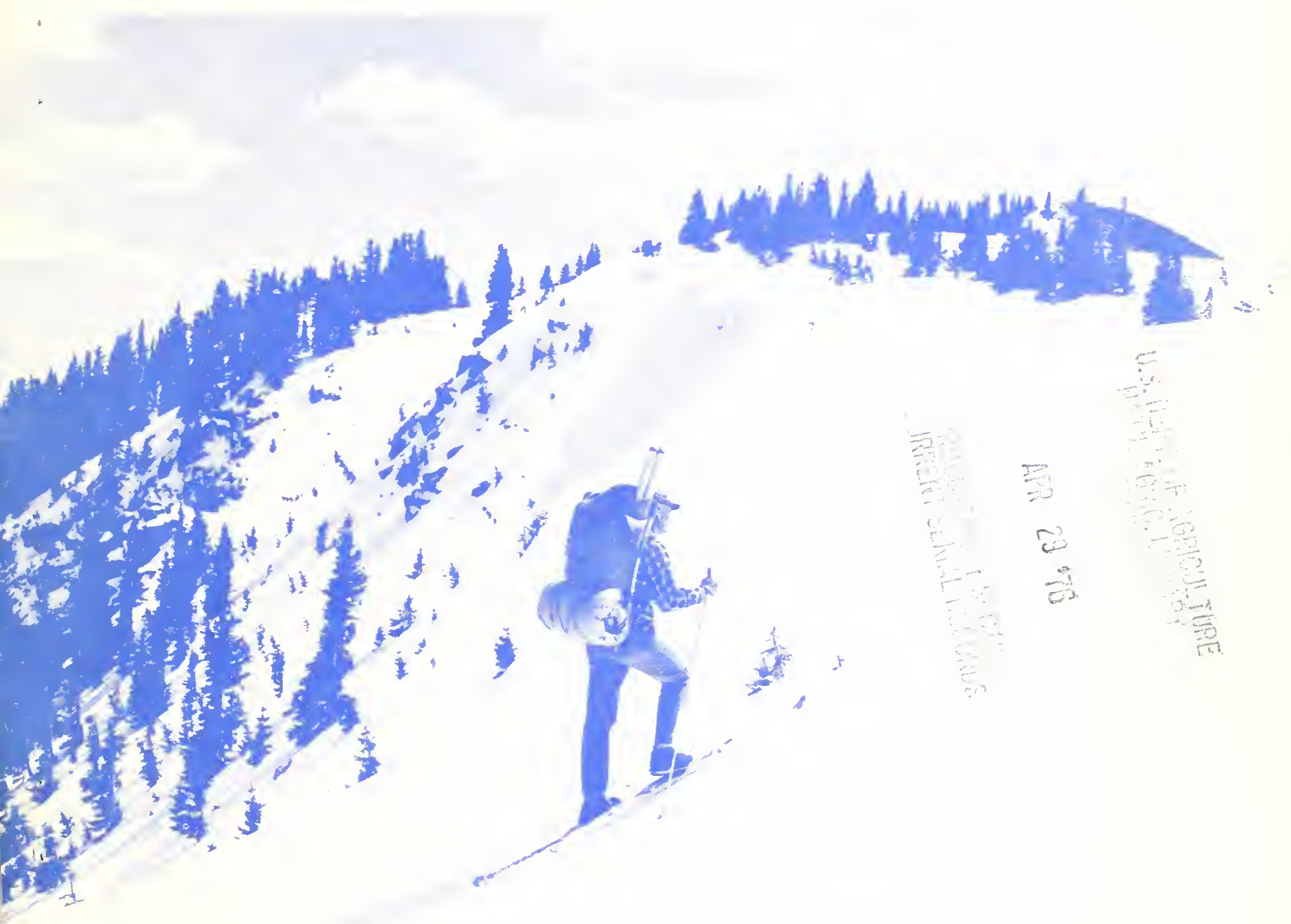
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WATER SUPPLY OUTLOOK FOR WESTERN UNITED STATES

Including Columbia River Drainage in Canada



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with
CALIFORNIA DEPARTMENT of WATER RESOURCES
and
BRITISH COLUMBIA DEPARTMENT of
LANDS, FORESTS and WATER RESOURCES

AS OF
APR. 1, 1976

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SURVEYOR ENROUTE TO THE MT. BALDY ARIZONA SNOW COURSE
SCS PHOTO AZ-5460

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 111, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR WESTERN UNITED STATES

Including Columbia River Drainage in Canada

ISSUED

APRIL 1, 1976

The Soil Conservation Service coordinates snow surveys conducted by its staff and many cooperators, including the Bureau of Reclamation, Corps of Engineers, Forest Service, National Park Service, NOAA, National Weather Service, Geological Survey, and other Federal Agencies, Departments of State Government, Irrigation Districts, Power Companies, and others.

The Department of Water Resources coordinates snow surveys in California.

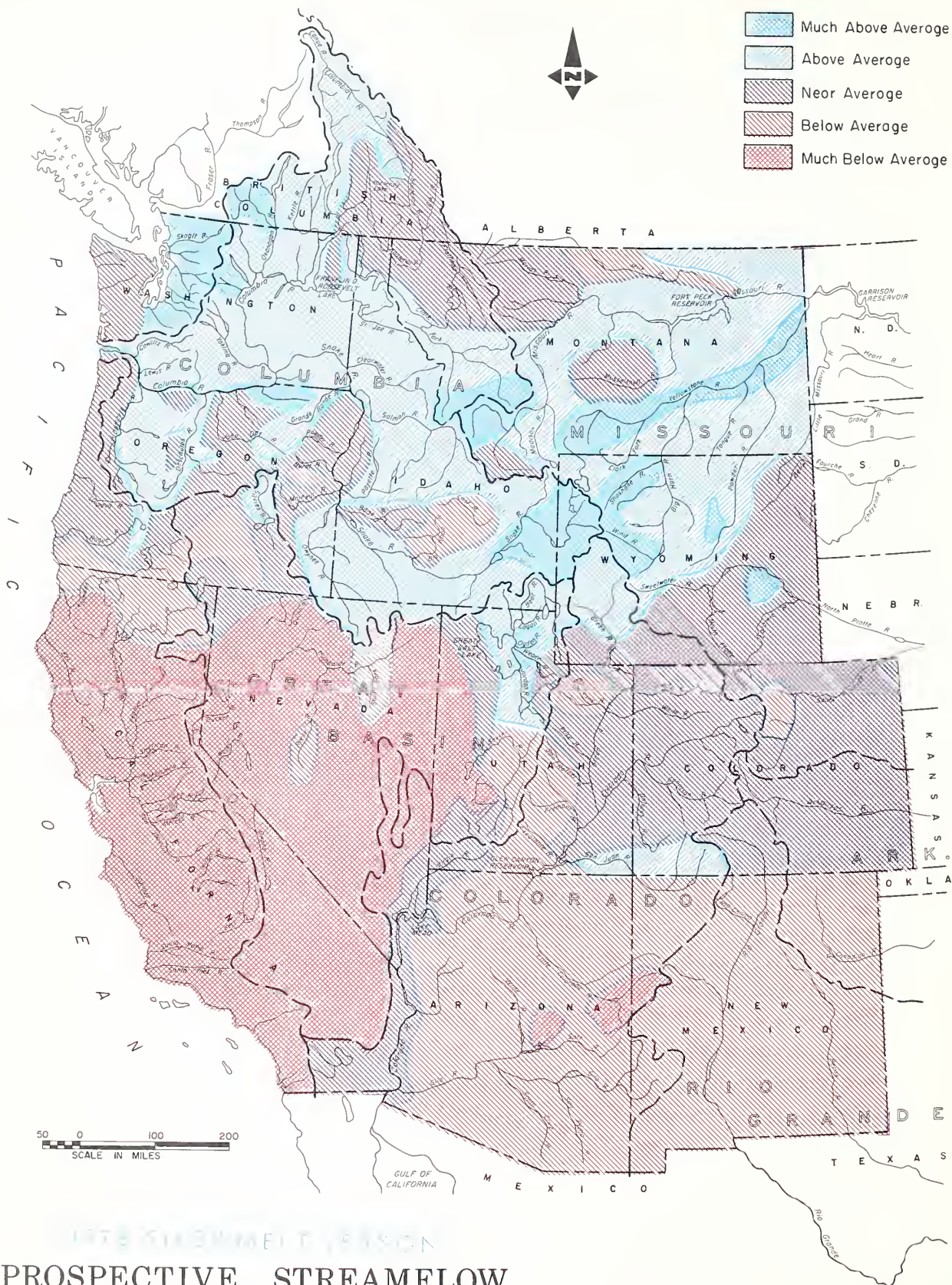
The Water Resources Service, Department of Lands, Forests, and Water Resources directs snow surveys in British Columbia.

This report was prepared by the Water Supply Forecasting Unit, Engineering Division, Soil Conservation Service, from data supplied by Snow Survey Supervisors of the Soil Conservation Service in the States of Alaska, Arizona, Colorado and New Mexico, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

Data from California was supplied by the Chief, Water Supply Forecast and Snow Survey Unit, Department of Water Resources.

Data from British Columbia was supplied by the Chief, Hydrology Division, Water Investigations Branch, Department of Lands, Forests and Water Resources.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
R.M. DAVIS, ADMINISTRATOR



PROSPECTIVE STREAMFLOW

03/07 APRIL 1 1978

WATER SUPPLY OUTLOOK

1976 SNOWMELT SEASON
APRIL 1, 1976

THE DROUGHT IN CALIFORNIA AND NEVADA CONTINUES, AND SNOWMELT RUNOFF WILL BE AS LOW AS ANY IN RECENT YEARS. RESERVOIR STORAGE WILL EASE THE SHORTAGE. ELSEWHERE, RUNOFF WILL BE GOOD TO EXCELLENT IN THE NORTHWEST AND THE NORTHERN ROCKIES. NEAR AVERAGE AMOUNTS ARE EXPECTED FROM THE CENTRAL AND SOUTHERN ROCKIES.

Irrigation water supplies should be adequate to excellent over much of the west. However, the drought in the southwest persists, and runoff will be very low in that region.

The California Department of Water Resources reports that supply conditions have deteriorated even further during March--the fourth month this season with below average precipitation. The below normal forecasts of snowmelt for the Central Valley have now been reduced to 30 percent of average for San Joaquin Valley streams and 45 percent for Sacramento Valley streams.

Streams draining the east slope of the Sierra Nevada will fare no better. These rivers are also forecast to yield only one-third to one-half their normal amounts. However, where users have supplemental supplies from reservoirs, the shortage will not be too severe. Most other regions of the Great Basin should receive adequate to above average supplies.

The Columbia Basin continued to receive average to above normal snowfall at high elevations, and the region-wide accumulation is now about 13 percent above the April 1 average. The Columbia is forecast to yield 110 percent of its 15-year normal during the April-September period. Nearly all tributaries will discharge at normal or greater rates. The only exception is in the Big Lost-Little Wood area of Central Idaho where runoff will fall 10-15 percent below normal. Reservoir storage will alleviate any late season shortages in the area.

The Missouri River Basin has highly variable snowpack conditions. Runoff generally will be average to above from most of Montana and northern Wyoming. Near average yields should be expected from central Wyoming and Colorado portions of the basin. Water supplies will be adequate to abundant in most of the region. About the only area of sub-normal flows is in the Front Range of the northern Colorado Rockies where streams may yield from 10-30 percent below their 15-year average. Reservoir storage is good, however, in this vicinity and will supplement the river flows.

The Colorado River Basin snowpack is near the 15-year average, and most areas served by the mainstem should receive adequate water supplies. Tributary conditions vary widely from north to south. The upper Green River in Wyoming will yield much above normal flows, while some Utah and Arizona watersheds are expected to contribute below average amounts. Stored reservoir water and pumping will be necessary to supplement the short supply of snowmelt runoff.

The Arkansas and upper Rio Grande are both expected to yield near average amounts. Reservoir storage is poor along the Arkansas and will not contribute appreciably to the irrigation supply. Downstream in New Mexico the Rio Grande will provide slightly below normal supplies to water users. Carryover reservoir storage, however, is good.

Major basin reports follow:

MISSOURI BASIN

Water supplies during the coming summer will be average to excellent throughout most of the Missouri River Basin. Mountain snowpacks are variable, but generally near or above the 15-year average. Supplemental water, stored in reservoirs throughout the basin, is in excellent supply. Valley soils are drier than usual, however.

The winter snowfall patterns are continuing. The heavy accumulations in Montana's Big Hole, Madison and Gallatin drainages; the Yellowstone in Wyoming and Montana; and the Wind-Big Horn, Tongue and Powder watersheds continue to accumulate at a rate greater than normal. Heavy accumulations remain on some central Wyoming tributaries of the North Platte. The small area of deficient snowpacks in northern Colorado persists.

Snowmelt streamflow is expected to be well above average from the Big Hole and Yellowstone Rivers in Montana. Similarly heavy runoff will occur from the Wind-Big Horn, Shoshone and Clarks Fork Rivers in Wyoming as well as small streams heading

SUMMARY OF SNOW WATER EQUIVALENT MEASUREMENTS

MAJOR BASIN AND SUB - WATERSHED	WATER EQUIVALENT IN PERCENT OF:		MAJOR BASIN AND SUB - WATERSHED	WATER EQUIVALENT IN PERCENT OF:	
	LAST YEAR	AVERAGE		LAST YEAR	AVERAGE
MISSOURI BASIN			SNAKE BASIN		
Jefferson	105	121	Snake above Jackson, Wyo.	135	141
Madison	113	124	Snake above Hiese, Idaho	129	136
Gallatin	104	112	Snake abv.American Falls Res.	-	-
Missouri Main Stem	96	105	Henry's Fork	113	125
Yellowstone	128	126	Southern Idaho Tributaries	86	114
Shoshone	138	161	Big and Little Wood	73	85
Wind	122	124	Boise	83	109
North Platte	96	105	Owyhee	60	120
South Platte	81	90	Payette	89	109
			Malheur	65	120
ARKANSAS BASIN			Weiser	89	109
Arkansas	69	97	Burnt	80	115
Cucharas-Purgatoire	58	99	Powder	80	100
			Salmon	94	108
RIO GRANDE BASIN			Grande Ronde	90	115
Rio Grande (Colo.)	76	121	Clearwater	104	106
Rio Grande (New Mexico)	47	80			
Pecos	7	15	LOWER COLUMBIA BASIN		
			Yakima	81	132
COLORADO BASIN			Umatilla	130	180
Green (Wyo.)	114	116	John Day	85	115
Yampa - White	74	90	Deschutes - Crooked	78	118
Duchesne	75	91	Hood	130	125
Price	69	92	Willamette	105	140
Upper Colorado	80	95	Lewis	130	134
Gunnison	72	95	Cowlitz	107	126
San Juan	73	118			
Dolores	61	104	PACIFIC COASTAL BASIN		
Virgin	80	102	Puget Sound	108	124
Gila	69	83	Olympic Peninsula	119	120
Salt	68	108	Umpqua - Rogue	65	110
Verde	68	110	Klamath	65	110
			Trinity	35	55
GREAT BASIN					
Bear	102	118	CALIFORNIA		
Logan	110	120	CENTRAL VALLEY		
Ogden	73	113	Upper Sacramento	40	60
Weber	82	107	Feather	20	30
Provo - Utah Lake	79	105	Yuba	30	40
Jordan	85	113	American	35	45
Sevier	83	96	Mokelumne	30	40
Walker - Carson	28	38	Stanislaus	20	30
Tahoe - Truckee	34	47	Tuolumne	35	40
Humboldt	66	99	Merced	25	30
Lake Co. (Oregon)	60	110	San Joaquin	25	30
Harney Basin (Oregon)	75	125	Kings	25	30
Owens	30	25	Kaweah	25	30
			Tule	15	20
UPPER COLUMBIA BASIN			Kern	25	25
Columbia (Canada)	127	116			
Kootenai	100	107			
Clark Fork	104	116			
Bitterroot	112	128			
Flathead	95	102			
Spokane	96	105			
Okanogan	76	105			
Methow	70	87			
Chelan	119	137			
Wenatchee	97	129			

Data for California Watersheds supplied by Dept. of Water Resources, and for British Columbia Watersheds by Dept. of Lands, Forests and Water Resources.

Average is for 1958-72 period. California averages are for the period 1931-70. Based on Selected Snow Courses determined by Distribution within the Basin, Length of Record and Repetitive Monthly Measurement Schedules.

in the west flank of the Big Horn range. Water users can anticipate abundant supplies this summer, since reservoir storage is also good to excellent. Nearly all major reservoirs in Montana and Wyoming are currently holding at least average quantities and many are up to 35 percent fuller than usual for April 1.

About the only stream in Montana which is forecast to yield below normal snowmelt runoff is the Milk River. However, current high storage levels in Fresno Reservoir and the capability for trans-basin diversion from the St. Mary River should result in adequate water supply for all users.

Runoff from the Red Rock, Mussellshell, St. Mary and other streams in that portion of the basin is forecast to be near the 15-year norm.

Near average flows are also forecast from the North Platte in Colorado and Wyoming. Much above normal yields from Deer, Boxelder and La Prele Creeks in central Wyoming will contribute to the North Platte supply. The Laramie River will flow at its 15-year average rate.

Any anticipated irrigation water shortages should be offset by the excellent carryover reservoir supplies. Pathfinder and Seminole reservoirs contain about twice their normal quantities as of April 1.

Tributaries of the South Platte River heading in Colorado are forecast to yield quantities below their 15-year average rates. Clear Creek is expected to flow at 70 percent of its average while the St. Vrain and the Big Thompson are forecast at 80 and 86 percent of average, respectively. The reservoir storage quantities available for use in the South Platte basin are near average, and will contribute to the mid and late summer supplies. City of Denver reservoirs are impounding a normal amount for April 1, while the Colorado-Big Thompson system holds 20 percent more than usual. Combined storage in other South Platte reservoirs is about 4 percent greater than average. Valley soils remain drier than usual in the region, so early irrigation demands can be expected to exceed normal.

ARKANSAS BASIN

The outlook for summer water supplies in the basin remains near average. March storms over the high elevations improved the snowpack in some areas while other watersheds received less than normal precipitation. Reservoir storage remains poor.

The Cucharas and Purgatoire drainages were benefitted by heavy snowfall in the high mountains during March. As a result the accumulated snowpack now is very close to the 15-year norm. Snowmelt runoff from the Cucharas is now expected to equal the average flow from April through September.

On the mainstem of the Arkansas the snowpack did not build at its normal rate during March. Consequently the runoff forecast has been revised downward to 102 percent or normal at the Salida gaging station.

Reservoir storage conditions showed no improvement during the month and impoundment levels remain quite low. John Martin still contains only 11 percent of its average April 1 quantity. Conchas reservoir also remains at about 45 percent of its average for this time of year, unchanged from March 1.

RIO GRANDE BASIN

Rio Grande Basin water users can expect near average quantities during the coming snowmelt season. Precipitation during March was normal to slightly below average over most of the basin, so the snowpack remained about as it was one month ago. Storage in major reservoirs remains good to excellent.

Snowpack conditions on the upper Rio Grande watershed in Colorado are about 20 percent above the April 1 normal. The best conditions are found in the San Juan range. Consequently, the mainstem is forecast to yield 12 percent above normal at Del Norte, and the Conejos is expected to flow at a rate 9 percent greater than average.

Downstream in New Mexico the March weather was more dry and mild. Consequently, the snowpack is now 20 percent below the April 1 average on the Rio Grande. The Pecos snowpack is nearly gone. Streamflow forecasts indicate an inflow to El Vado reservoir of about 5 percent more than normal, while the Pecos is expected to yield 85 percent of its 15-year average during the April through September period.

Reservoir storage remains generally good to excellent throughout the basin. Elephant Butte currently holds 65 percent more than normal while other New Mexico reservoirs in the basin contain about 100,000 acre-feet more than the April 1 average.

SELECTED STREAMFLOW FORECASTS

APRIL 1, 1976

STREAM AND STATION	FORECASTS THIS YEAR		Forecast Period	Last Year's Flow In (1,000 A.F.)
	Flow In (1,000 A.F.)	Percent of Average		
SASKATCHEWAN				
St. Mary near Babb, Montana <u>1/</u>	505	103	April-Sept.	-
UPPER MISSOURI				
Beaverhead near Grant, Montana <u>2/</u>	147	101	April-Sept.	295
Big Hole near Melrose, Montana	990	132	April-Sept.	-
Jefferson at Silver Star, Montana	-	-	April-Sept.	-
Madison near Grayling, Montana <u>3/</u>	590	123	April-Sept.	529
Gallatin near Gateway, Montana	635	120	April-Sept.	-
Sun at Gibson Dam, Montana <u>4/</u>	620	105	April-Sept.	829
Belt near Monarch, Montana	150	122	April-Sept.	-
Marias near Shelby, Montana <u>5/</u>	570	102	April-Sept.	1,216
Missouri near Landusky, Montana <u>5/</u>	5,500	116	April-Sept.	-
near Williston, North Dakota <u>7/</u>	15,000	128	April-Sept.	-
S.Fk. Musselshell above Martinsdale, Montana	54	108	April-Sept.	-
Milk at Eastern Crossing, Montana	230	88	April-Sept.	-
Yellowstone at Yellowstone Lake Outlet, Wyo.	1,030	125	April-Sept.	844
at Corwin Springs, Montana	2,660	133	April-Sept.	2,159
at Miles City, Montana <u>8/</u>	8,300	130	April-Sept.	-
Clarks Fork near Belfry, Montana	775	128	April-Sept.	-
Shoshone below Buffalo Bill Res., Wyo. <u>9/</u>	1,110	134	April-Sept.	917
Wind near Dubois, Wyoming	146	143	April-Sept.	126
at Riverton, Wyoming <u>10/</u>	900	136	April-Sept.	731
below Boysen Res., Wyoming <u>11/</u>	1,300	129	April-Sept.	1,206
Bull Lake Creek near Lenore, Wyoming	205	113	April-Sept.	188
Little Popo Agie near Lander, Wyoming	55	116	April-Sept.	56
Tensleep near Tensleep, Wyoming	86	109	April-Sept.	-
Medicine Lodge near Hyattville, Wyoming	24	113	April-Sept.	-
Shell Creek near Shell, Wyoming	95	130	April-Sept.	93
Big Horn near St. Xavier, Montana <u>8/</u>	2,370	128	April-Sept.	2,497
Tongue near Dayton, Wyoming	140	124	April-Sept.	172
No. Fork Powder near Hazelton, Wyoming	14	140	April-Sept.	15
PLATTE				
North Platte near Sinclair, Wyoming	612	94	April-Sept.	789
Encampment near Encampment, Wyoming	147	104	April-Sept.	191
Deer Creek at Glenrock, Wyoming	41	156	April-Sept.	44
Laramie Riv. & Pioneer Canal, nr Woods, Wyo. <u>12/</u>	127	100	April-Sept.	124
Big Thompson at Drake, Colorado <u>13/</u>	92	86	April-Sept.	-
Clear at Golden, Colorado <u>14/</u>	89	70	April-Sept.	-
St. Vrain at Lyons, Colorado <u>15/</u>	60	80	April-Sept.	-
Cache LaPoudre near Fort Collins, Colorado <u>16/</u>	240	97	April-Sept.	-
ARKANSAS				
Arkansas at Salida, Colorado <u>17/</u>	320	102	April-Sept.	-
Cucharas near LaVeta, Colorado	10	100	April-Sept.	-
Purgatoire at Trinidad, Colorado	34	89	April-Sept.	-
RIO GRANDE				
Rio Grande near Del Norte, Colorado <u>18/</u>	525	112	April-Sept.	-
at Otowi Bridge, New Mexico <u>19/</u>	600	114	April-Sept.	-
Conejos near Mogote, Colorado <u>20/</u>	200	109	April-Sept.	-
El Vado Res., Inflow, New Mexico	200	105	April-Sept.	-
Pecos at Pecos, New Mexico	35	85	April-Sept.	-
UPPER COLORADO				
Colorado, Grandby Res. Inflow, Colorado <u>21/</u>	220	96	April-Sept.	-
near Dotsero, Colorado <u>22/</u>	1,400	98	April-Sept.	-
near Cameo, Colorado <u>23/</u>	2,350	99	April-Sept.	-
near Cisco, Utah <u>24/</u>	3,083	109	April-July	4,038
Lake Powell Inflow, Arizona <u>25/</u>	7,109	103	April-July	10,407
Roaring Fork at Glenwood Springs, Colorado <u>26/</u>	715	100	April-Sept.	-
Uncompahgre at Colona, Colorado	150	112	April-Sept.	-
Gunnison, Blue Mesa Res. Inflow, Colorado <u>27/</u>	840	106	April-Sept.	-
near Grand Junction, Colorado <u>28/</u>	1,250	106	April-Sept.	-
Dolores at Dolores, Colorado	255	110	April-Sept.	-

Forecasts in California provided by Department of Water Resources.
Average is for 1958-72 period except California. California is computed for 1921-70 period
Forecasts assume average Effective Climate Conditions from Date Through Snow Melt Season
Explanatory Notes on Forecasts listed on Inside Back Cover

SELECTED STREAMFLOW FORECASTS

APRIL 1, 1976

STREAM AND STATION	FORECASTS THIS YEAR		Forecast Period	Last Year's Flow In (1,000 A.F.)
	Flow In (1,000 A.F.)	Percent of Average		
UPPER COLORADO (continued)				
Green at Warren Bridge, Wyoming	395	121	April-Sept.	335
at Green River, Wyoming <u>29/</u>	1,300	131	April-Sept.	1,167
Flaming Gorge Res. Inflow, Utah <u>27/</u>	1,429	122	April-July	1,635
at Green River, Utah <u>30/</u>	2,733	96	April-July	4,082
Big Sandy near Big Sandy, Wyoming	63	110	April-Sept.	72
Yampa at Steamboat Springs, Colorado	270	84	April-Sept.	-
near Maybell, Colorado	790	87	April-Sept.	-
Little Snake near Dixon, Wyoming	285	95	April-Sept.	-
White near Meeker, Colorado	285	97	April-Sept.	-
Strawberry at Duchesne, Utah <u>40/</u>	50	89	April-July	-
Duchesne near Tabiona, Utah <u>37/</u>	87	84	April-July	-
at Randlett, Utah <u>40/</u>	165	75	April-July	-
Lakefork below Moon Lake, Utah <u>32/</u>	53	77	April-July	-
Uinta near Neola, Utah	59	67	April-July	-
Whiterocks near Whiterocks, Utah	40	69	April-July	-
Price, Scofield Res. Inflow, Utah <u>33/</u>	54	84	April-July	-
Cottonwood near Orangeville, Utah <u>34/</u>	32	70	April-July	-
San Juan, Navajo Res. Inflow, New Mexico <u>27/</u>	680	114	April-Sept.	-
near Bluff, Utah <u>35/</u>	985	115	April-July	-
Animas at Durango, Colorado	450	106	April-Sept.	-
LOWER COLORADO				
Virgin near Virgin, Utah	44	92	April-June	46
Little Colorado above Lyman, Arizona	4	54	April-June	12
Gila near Solomon, Arizona	36	81	April-May	75
Frisco at Clifton, Arizona	18	76	April-May	35
Salt at Intake, Arizona	105	74	April-May	272
Tonto above Roosevelt, Arizona	4	48	April-May	26
Verde above Horseshoe Dam, Arizona	42	78	April-May	93
GREAT BASIN				
Bear at Utah-Wyo. State Line	110	98	April-July	140
at Harer, Idaho	336	113	April-Sept.	-
Smith's Fork near Border, Wyoming	135	116	April-Sept.	134
Thomas Fork near Wyo.-Ida. State Line	40	124	April-Sept.	42
Logan near Logan, Utah <u>36/</u>	130	115	April-July	140
Ogden, Pine View Res. Inflow, Utah <u>27/</u>	140	127	April-June	181
Weber near Oakley, Utah	98	98	April-June	104
Provo near Hailstone, Utah <u>37/</u>	104	102	April-July	-
Strawberry Res. Inflow, Utah	43	96	April-July	-
Utah Lake Net Inflow, Utah	225	108	April-July	-
Big Cottonwood near Salt Lake City, Utah	40	111	April-July	50
Beaver near Beaver, Utah	12	66	April-July	18
Sevier near Hatch, Utah	38	93	April-July	35
near Gunnison, Utah	26	67	April-July	55
So. Fork Humboldt near Elko, Nevada	50	76	April-July	-
Humboldt at Palisades, Nevada	125	65	April-July	475
Truckee at Farad, California <u>38/</u>	115	43	April-July	367
East Carson near Gardnerville, Nevada	90	49	April-July	243
West Carson at Woodsfords, California	25	48	April-July	66
East Walker near Bridgeport, California <u>39/</u>	22	32	April-Aug.	98
West Walker near Coleville, California	70	48	April-July	184
Donner und Blitzen near Frenchglen, Oregon	54	102	April-Sept.	-
Silvies near Burns, Oregon	87	118	April-Sept.	-
Chewaucan near Paisley, Oregon	58	73	April-Sept.	-
Deep above Adel, Oregon	58	86	April-Sept.	-
Bidwell near Ft. Bidwell, California	11	96	April-July	12
Owens below Long Valley Res., California	22	36	April-July	56
UPPER COLUMBIA				
Columbia at Birchbank, British Columbia <u>40/</u>	51,500	111	April-Sept.	41,188
at Grand Coulee, Washington <u>40/</u>	77,440	112	April-Sept.	66,512

Forecasts in California provided by Department of Water Resources
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Explanatory Notes on Forecasts listed on Inside Back Cover

SELECTED STREAMFLOW FORECASTS

APRIL 1, 1976

STREAM AND STATION	FORECASTS THIS YEAR		Forecast Period	Last Year's Flow In (1,000 A.F.)
	Flow In (1,000 A.F.)	Percent of Average		
UPPER COLUMBIA (continued)				
Columbia below Rock Island, Washington	85,200	113	April-Sept.	74,143
Kootenai below Libby Dam nr Libby, Montana	7,750	104	April-Sept.	6,388
at Leonia, Idaho	9,450	104	April-Sept.	8,093
Blackfoot near Bonner, Montana	1,330	129	April-Sept.	1,371
So.Fk. Flathead nr Columbia Falls, Montana 40/	2,500	105	April-Sept.	2,520
Flathead at Columbia Falls, Montana 40/	6,600	103	April-Sept.	6,794
near Polson, Montana 40/	7,900	103	April-Sept.	7,895
Clark Fork above Missoula, Montana	2,340	128	April-Sept.	2,722
near Plains, Montana 40/	14,400	114	April-Sept.	14,101
at Whitehorse Rapids, Idaho	15,900	113	April-Sept.	-
Bitterroot near Darby, Montana	770	132	April-Sept.	736
Priest near Priest River, Idaho 41/	825	94	April-July	-
Pend Oreille below Box Canyon, Washington	18,000	113	April-Sept.	17,559
Kettle near Laurier, Washington	2,210	118	April-Sept.	1,861
Spokane at Post Falls, Idaho 42/	3,300	110	April-Sept.	-
Similkameen near Nighthawk, Washington	2,060	136	April-Sept.	1,434
Okanogan near Tonasket, Washington	2,200	128	April-Sept.	1,582
Methow near Pateros, Washington	1,270	123	April-Sept.	-
Stehekin at Stehekin, Washington	1,120	124	April-Sept.	-
Chelan at Chelan, Washington 43/	1,590	127	April-Sept.	1,363
Wenatchee at Peshastin, Washington	2,340	131	April-Sept.	1,920
SNAKE				
Snake above Palisades Res., Wyoming 44/	3,660	140	April-Sept.	2,838
near Heise, Idaho 45/	5,250	133	April-Sept.	-
near Blackfoot, Idaho 46/	5,470	133	April-July	-
at Weiser, Idaho	7,050	108	April-Sept.	-
Grey's above Palisade, Wyoming	500	129	April-Sept.	424
Salt above Palisade, Wyoming	465	127	April-Sept.	524
Henry's Fork near Ashton, Idaho 47/	850	127	April-Sept.	-
Teton near St. Anthony, Idaho	600	136	April-Sept.	-
Big Lost near MacKay, Idaho 48/	140	77	April-Sept.	-
Little Lost near Howe, Idaho	38	93	April-Sept.	-
Portneuf at Topaz, Idaho	115	124	March-Sept.	-
Oakley Res. Inflow, Idaho	36	122	March-Sept.	-
Salmon Falls Creek nr San Jacinto, Idaho	105	125	March-Sept.	-
Little Wood above High 5 Crks, Idaho	75	80	April-Sept.	-
Big Wood, Inflow to Magic Res., Idaho 49/	265	88	April-Sept.	-
Bruneau near Hot Springs, Idaho	260	115	March-Sept.	-
Boise near Boise, Idaho 50/	1,750	108	April-Sept.	-
Owyhee near Owyhee, Nevada 51/	68	100	April-July	144
Owyhee Res. Net Inflow, Oregon 27/	390	118	April-Sept.	-
Malheur near Drewsey, Oregon	75	104	April-Sept.	-
Payette near Horseshoe Bend, Idaho 52/	2,050	111	April-Sept.	-
Weiser above Crane Creek, Idaho 40/	530	104	March-Sept.	-
Burnt near Hereford, Oregon 40/	36	109	April-Sept.	-
Powder near Sumpter, Oregon	56	100	April-Sept.	-
Eagle above Skull Creek, Oregon	195	103	April-Sept.	-
Imnaha at Imnaha, Oregon	309	101	April-Sept.	-
Salmon at Whitebird, Idaho	7,650	110	April-Sept.	-
Lostine near Lostine, Oregon	126	101	April-Sept.	-
Grande Ronde at LaGrande, Oregon	218	138	April-July	-
Clearwater at Spalding, Idaho	9,800	114	April-Sept.	-
LOWER COLUMBIA				
Yakima at CleElum, Washington 53/	1,090	113	April-Sept.	1,112
near Parker, Washington 54/	2,150	124	April-Sept.	-
Naches near Naches, Washington 55/	1,060	119	April-Sept.	1,054
Walla Walla, So. Fork near Milton, Oregon	78	116	April-Sept.	-
Umatilla at Pendleton, Oregon	198	137	April-Sept.	-
John Day, Middle Fork at Ritter, Oregon	113	108	April-Sept.	-
North Fork at Monument, Oregon	627	116	April-Sept.	-

Forecasts in California provided by Department of Water Resources
Average is for 1958-72 period except California. California is computed for 1921-70 period
Forecasts assume average Effective Climate Conditions from Date Through Snow Melt Season
Explanatory Notes on Forecasts listed on Inside Back Cover

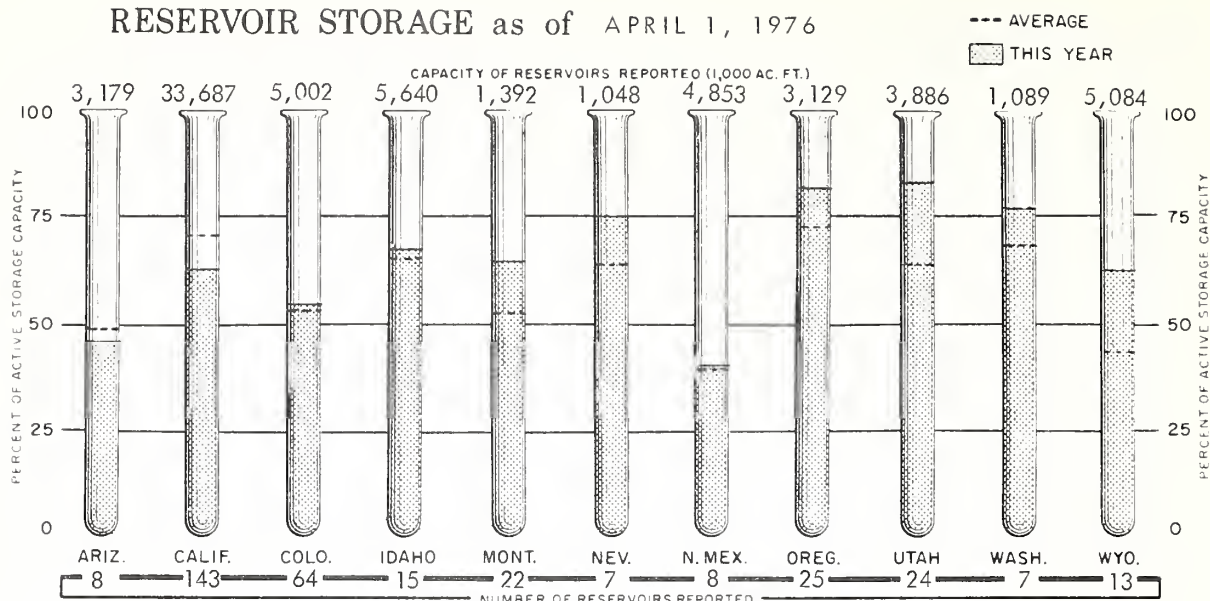
SELECTED STREAMFLOW FORECASTS

APRIL 1, 1976

STREAM AND STATION	FORECASTS THIS YEAR		Forecast Period	Last Year's Flow In (1,000 A.F.)
	Flow In (1,000 A.F.)	Percent of Average		
LOWER COLUMBIA (continued)				
Crooked near Post, Oregon	100	110	April-Sept.	-
Deschutes at Benham Falls, Oregon <u>40/</u>	590	107	April-Sept.	-
Columbia at The Dalles, Oregon <u>40/</u>	83,000	113	April-June	73,078
at The Dalles, Oregon <u>40/</u>	98,200	109	April-July	94,328
at The Dalles, Oregon <u>40/</u>	114,900	110	April-Sept.	109,012
Hood near Tucker Bridge, Oregon <u>40/</u>	DISCONTINUED		April-July	-
McKenzie near Vida, Oregon	1,457	115	April-Sept.	-
Santiam, South, at Waterloo, Oregon	717	115	April-Sept.	-
North, at Mehama, Oregon <u>40/</u>	1,036	118	April-Sept.	-
Clackamas at Estacada, Oregon	876	111	April-Sept.	-
Willamette at Salem, Oregon <u>40/</u>	5,437	110	April-Sept.	-
Lewis at Ariel, Washington <u>56/</u>	1,480	110	April-Sept.	1,196
Cowlitz at Castle Rock, Washington <u>57/</u>	3,050	110	April-Sept.	2,652
NORTH PACIFIC COASTAL				
Dungeness near Sequim, Washington	180	109	April-Sept.	-
Umpqua, No., near Toketee Falls, Oregon <u>40/</u>	180	108	April-Sept.	-
Rogue at Raygold, Oregon	939	106	Apr 1-Sept.	1,209
Klamath Lake, Net Inflow, Oregon	525	98	April-Sept.	742
Trinity at Lewiston, California	375	61	April-July	895
CALIFORNIA CENTRAL VALLEY <u>40/</u>				
Sacramento, Inflow to Shasta, California	1,320	74	April-July	2,369
Feather near Oroville, California	700	38	April-July	2,634
Yuba at Smartville, California	330	31	April-July	1,378
American, Inflow to Folsom Res., California	300	23	April-July	1,648
Cosumnes at Michigan Bar, California	23	17	April-July	191
Mokelumne, Inflow to Pardee Res., California	140	30	April-July	605
Stanislaus, Inflow to Melones Res., California	185	26	April-July	932
Tuolumne, Inflow to Don Pedro Res., California	400	32	April-July	1,490
Merced, Inflow to Exchequer Res., California	210	35	April-July	817
San Joaquin, Inflow to Millerton Lake, Calif.	370	31	April-July	1,413
Kings, Inflow to Pine Flat Res., California	400	35	April-July	1,266
Kaweah, Inflow to Terminus Res., California	85	31	April-July	296
Tule, Inflow to Success Res., California	12	20	April-July	67
Kern, Inflow to Isabella Res., California	110	26	April-July	368
ALASKA				
Yukon at Eagle, Alaska	30,000	87	April-July	44,523
at Ruby, Alaska	56,000	84	April-July	66,991
Porcupine near Fort Yukon, Alaska	6,000	83	April-July	-
Salcha near Salchaket, Alaska	610	80	April-July	706
Little Chena near Fairbanks, Alaska	74	80	April-July	76
Chena at Fairbanks, Alaska	445	80	April-July	505
Ship Creek near Anchorage, Alaska	62	105	April-July	58
So.Fk.Campbell at Canyon Mouth nr Anchorage, AK	15	111	April-July	14

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Explanatory Notes on Forecasts listed on Inside Back Cover

RESERVOIR STORAGE as of APRIL 1, 1976



COLORADO BASIN

Snowmelt runoff from Colorado Basin streams should provide water users with near average supplies. Some areas, however, will experience below normal river flows while a portion of the basin in Wyoming will contribute above normal flows. The carryover storage in most reservoirs remains good to excellent.

Snowfall during March was quite variable. Some parts of the lower basin in Arizona and southern Utah received very little moisture. Other regions, such as the upper Green River, continued to accumulate more than the usual quantities of snow. Analysis of the snowpack over the entire basin indicates that as of April 1 the winter pack is comparable to average. Deficiencies remain in parts of Arizona, some central Utah mountains, the Uinta range, and in northwestern Colorado.

On the Gila watershed the snowpack is now 17 percent below average. Utah's Price and Duchesne River drainages have about 10 percent less snow than the April 1 norm, and similar conditions are found along the White and Yampa Rivers. The upper Green and San Juan areas remain in the best condition of any basin tributaries. The snowpack in these regions is currently 16 to 18 percent above the median.

Streamflow forecasts for the Green River reflect the good snowpack conditions. As an example, the inflow to Flaming Gorge reservoir is expected to be 22 percent above the 15-year average. Above normal yields are also expected from San Juan range streams, with Navajo reservoir inflow predicted to be 14 percent above the norm.

The mainstem of the Colorado is forecast to discharge at a rate of 96 percent of average into Granby reservoir. Progressing downstream, the forecasts are for 98 percent at Dotsero, 99 percent at Cameo, 109 percent of average at Cisco, Utah, and 103 percent of normal inflow into Lake Powell.

Tributary rivers and streams heading in the Uinta mountains of Utah will yield from 65 to 75 percent of their average supplies. Comparable flows should be expected from streams draining east out of central Utah.

The Yampa River in Colorado is forecast to flow at a rate 15 percent below average, but the White River yield will approximate its long-term average amount.

In Arizona the Little Colorado is forecast to yield about one-half its normal quantity during the remainder of the snowmelt season. A similar amount is expected from the Tonto. The Verde, Salt and Frisco will all contribute about three-fourths their usual amounts. To the north the Virgin is expected to flow at a rate about 8 percent below average.

Reservoir storage in the upper Colorado system is good to excellent, and should help to offset late season streamflow deficiencies. Flaming Gorge now contains more than twice its usual April 1 quantity. Lake Powell holds 14 percent more than its average for this date. The Lower Colorado-Salt systems are more variable, but in general, reservoir storage is good. Near average quantities remain in Havasu and Mojave as well as in the Salt River system. However, San Carlos has only about half its usual April 1 quantity. Lake Mead

STORAGE IN LARGE RESERVOIRS

APRIL 1, 1976

BASIN AND NAME OF RESERVOIR	CAPACITY (1,000 A.F.)	STORAGE (1,000 A.F.)	STORAGE PERCENT AVERAGE	BASIN AND NAME OF RESERVOIR	CAPACITY (1,000 A.F.)	STORAGE (1,000 A.F.)	STORAGE PERCENT AVERAGE
UPPER MISSOURI				UPPER COLUMBIA			
Belle Fourche	185	120	102	Chelan	676	378	211
Boysen	550	226	98	Coeur d'Alene	225	118	68
Buffalo Bill	373	176	130	Duncan	1,400	129	177
Canyon Ferry	1,552	1,561	99	Flathead	1,791	768	97
Fort Peck	19,140	17,350	130	Hungry Horse	3,428	2,245	104
Garrison	24,790	19,997	138	Kootenay	787	171	86
Hebgen	377	255	124	Lake Koocanusa	5,694	1,164	-
Keyhole	192	130	162	Lower Arrow	2,691	836	1020
Lake Francis Case	5,816	3,865	95	Noxon Rapids	335	173	87
Lake Sharp	1,900	1,777	104	Pend Oreille	1,155	466	98
Oahe	23,630	18,849	115	Roosevelt	5,232	1,196	66
Tiber	1,347	552	92	Upper Arrow	4,400	1,109	317
Bighorn Lake	1,356	784	98				
PLATTE				LOWER COLUMBIA			
So. Platte in Colo. (30)	1,085	868	104	Cougar	155	88	118
City of Denver (7)	622	460	100	Detroit	300	132	75
Colo-Big Thompson (3)	718	502	120	Green Peter	270	164	99
Glendo	784	480	120	Hills Creek	200	115	95
Pathfinder	1,016	871	209	Lookout Point	337	145	83
Seminole	1,010	541	185	Prineville	153	138	112
ARKANSAS				Wickiup	200	200	106
Conchas	273	83	45	Yakima Res. (5)	1,066	815	111
John Martin	354	10	11				
Turquoise	130	45	-	SNAKE			
RIO GRANDE				American Falls	1,125	1,086	109
Elephant Butte	2,195	651	165	Anderson Ranch	423	245	107
New Mexico Res. (4)	578	195	212	Arrowrock	287	258	111
UPPER COLORADO				Brownlee	980	485	120
Blue Mesa	830	423	-	Cascade	653	319	105
Flaming Gorge	3,749	3,332	210	Dworshak	2,016	21	7
Navajo	1,696	1,091	-	Jackson	847	638	123
Powell	25,002	19,738	114	Lucky Peak	278	84	71
Starvation	165	143	-	Owyhee	715	667	131
LOWER COLORADO				Palisades	1,200	572	72
Havasu	619	553	100	Warm Springs	191	149	125
Mead	26,159	20,307	120	PACIFIC COASTAL			
Mohave	1,810	1,655	99	Clair Engle	2,448	1,849	84
Salt River Res. (4)	1,755	1,168	102	Clear Lake	440	301	121
San Carlos	949	106	53	Nacimiento	350	292	129
Verde River Res. (2)	318	136	86	Ross	1,404	861	112
GREAT BASIN				Upper Klamath	584	415	87
Bear	1,421	1,035	106	CALIFORNIA			
Deer Creek	150	97	102	CENTRAL VALLEY			
Lahontan	291	221	101	Almanor	1,308	546	69
Rye Patch	157	171	163	Berryessa	1,602	1,314	82
Sevier Bridge	236	198	170	Bullards Bar	961	349	55
Strawberry	270	247	207	Folsom	1,010	634	96
Tahoe	732	481	105	Isabella	570	156	83
Utah	884	951	148	McClure	1,026	591	97
Willard Bay	193	165	121	Millerton	521	358	100
				Oroville	3,538	2,864	100
				Pine Flat	1,002	517	80
				Shasta	4,552	3,170	78

Reservoir Storage Data Provided by Bureau of Reclamation, Corps of Engineers, Geological Survey and water using organizations. Data from California and British Columbia provided by Department of Water Resources and Department of Lands, Forests and Water Resources respectively.

is in the best shape, percentage-wise, with 20 percent more than normal currently impounded.

GREAT BASIN

Water supplies for irrigation and other uses may be seriously deficient along streams heading in the Sierra Nevada. Just the reverse is expected in northern Utah where streams are forecast to yield above average quantities.

The snowpack on the east slope of the Sierra Nevada is very light, and at some snow course locations is near the minimum of record. Runoff from this region will be similar to that experienced during the low flow years of 1959 through 1961. Reservoir storage is excellent, however, so where water users have supplemental storage the situation should not be critical.

Irrigation supplies from direct stream diversion will be short, however. Deficiencies will be most severe during the late summer. The East Walker is forecast to yield only one-third of its normal flow. The West Walker and both the East and West Carson Rivers will discharge about half their normal quantities. The Truckee is forecast to contribute only 43 percent of its normal.

Reservoir storage in the region is generally good. Carryover supplies should be sufficient to offset much of the predicted streamflow shortage. Lake Tahoe currently holds 5 percent more water than usual on April 1, while Rye Patch is 63 percent above the normal mark.

To the east the Humbolt snowpack is near average. The combination of normal snowpack and excellent reservoir storage should insure a year of adequate irrigation supplies.

The snowpack increased substantially in Oregon's Lake County-Harney Basin region. As a result of this improvement, the streamflow forecasts have been revised upward. As an example, Silvies near Burns is now expected to yield 18 percent more than normal. Other vicinity streamflow forecasts were raised about 10 percent, but most are not expected to reach their 15-year average.

Most Utah rivers which drain into the Great Basin have reasonably good snowpacks, however, there are some exceptions. The Bear and Logan drainages have up to 20 percent more snow than usual, while the Jordan and Ogden are about 13 percent above the normal mark.

Streamflow forecasts indicate that most water users in this area should experience a normal to excellent year. The Bear River is expected to yield 113 percent of its average at Harer, Idaho. The Smith's Fork, Thomas Fork, Logan and Ogden Rivers are forecast to yield 16, 24, 15 and 27 percent above average, respectively.

The Weber River is expected to flow at a rate near its 15-year average. Strawberry reservoir inflow will also be near normal. Up to 10 percent above normal discharge is predicted from Big Cottonwood. Utah Lake will receive about 8 percent more inflow than normal.

Water supplies are expected to be short from the Beaver and the lower Sevier near Gunnison, Utah. These streams will yield about two-thirds their average flows.

Reservoir storage is good throughout most of the Utah portion of the Great Basin, so in regions such as the Sevier supplemental water from reservoir storage may help relieve the shortages caused by low streamflow. Sevier Bridge is still nearly 70 percent higher than usual for this date. Strawberry reservoir contains about twice its usual amount.

COLUMBIA BASIN

Water supplies should be adequate to excellent over nearly all of the Columbia Basin. Snowpack conditions continue to improve and reservoir storage is excellent. The only drainages that are expected to yield below normal flows is in central Idaho, but carryover reservoir storage in this area will help assure adequate supplies.

The snowpack improved over virtually the entire basin during March. Although the monthly precipitation was not particularly heavy, except over the upper Snake River watershed, the weather was cool and high elevation snowpacks built substantially.

The central Idaho region where the Big and Little Wood and Big and Little Lost Rivers head has been deficient in snow all winter. Improvement was noted this month, however, and most of this area is up to about 85 percent of normal.

The heaviest snowpack conditions are found on the upper Snake in Wyoming, on the Umatilla and along the Cascades. The Umatilla pack is 80 percent greater than the April 1 normal, and the Palouse is similarly heavy. The Willamette drainage accumulation is 40 percent above average while the snowpacks on the Lewis, Cowlitz, and Yakima

watersheds are currently 35, 25 and 40 percent above average, respectively.

The forecasts of snowmelt runoff indicate that nearly all basin tributaries will yield more than their normal quantities. Flows will be in the range of 25 to 40 percent greater than average from the Bitterroot in Montana, the upper Snake in Wyoming, and Idaho streams heading in the Teton mountains. Other watersheds that will yield in this range are the Similkameen and Okanogan Rivers flowing out of British Columbia, the Methow, Stehekin, Chelan, Wenatchee, Yakima, and Umatilla Rivers.

As stated above, the Little Wood and Big Lost Rivers in central Oregon have deficient snowpacks, at 77 and 81 percent of normal respectively. The Priest River, Camas-Beaver Creeks and Big Wood drainages snowpacks are at 91 to 94 percent of normal. Seasonal runoff will be up to 20 percent below normal from these streams, but reservoir storage is available to properly manage the runoff and assure adequate irrigation water supplies.

Elsewhere throughout the basin snowmelt runoff will range from normal to 20 percent above the 15-year norm.

Reservoir storage is excellent with many facilities either full now or expected to fill during the runoff season. Consequently, water users are assured of excellent supplies this summer.

The heaviest snowpack conditions are found on the upper Snake in Wyoming, on the Umatilla and Palouse River watersheds in Oregon and Washington and along the Cascades. The Umatilla pack is 80 percent greater than the April 1 normal, and the Palouse is similarly heavy. The Willamette drainage accumulation is 40 percent above average while the snowpacks on the Lewis, Cowlitz, and Yakima watersheds are currently 35, 25, and 40 percent above average, respectively.

CALIFORNIA

The California Department of Water Resources, coordinating agency for snow surveys and water supply forecasting in California, reports that the drought which began last year is becoming even more critical. A below average March rainfall and snow accumulation throughout the state increased the water supply problems being experienced by several small irrigation agencies and municipalities who are dependent on local water supplies. However, federal and state water projects expect to meet their commitments for firm supplies and, with efficient use of surface

storage and increased use of ground water, agricultural water deficiencies are expected to be minimized in the Central Valley this season.

April 1 snow surveys show that about one-third of the state's snow courses have the lowest water content of record. Snow stored water is only 30 percent of average in the San Joaquin River Basin and 45 percent in the Sacramento River Basin. Statewide, the snowpack is now 40 percent of average. Telemetered automatic snow sensors all showed the water content of the snowpack peaked about mid-March indicating that melt has begun at all elevations. In the five southern San Joaquin Valley River Basins, satellite imagery places the snow line on April 1 at an average elevation of 7,300 feet (2 225m) with the snow covering an area of 3,000 square miles (7 800km²). In comparison, last year on April 1 there were 4,000 square miles (10 400km²) of snow-covered area at an average elevation of 5,700 feet (1 740m). Unless a major cold storm of unusual magnitude occurs in the next few weeks, early melt-off of the snowpack will be experienced this year.

Precipitation during March was below average throughout the state, with about 60 percent of normal in the San Joaquin Valley, and 40 percent of normal in the Sacramento Valley. For the first half of the water year, October 1 to March 31, statewide precipitation has been 60 percent of average, with the San Francisco Bay lowest at 35 percent, and the North Coastal and Lahontan areas highest at 75 percent of average. Precipitation in the Central Valley for the six-month period was 50 percent of average.

Statewide runoff during March was 55 percent of normal, varying from a low of 5 percent in the San Francisco Bay area to a high of 70 percent on the North Coast. March runoff was 50 percent of average in the Central Valley. Statewide runoff for the water year, October 1 to date, was 50 percent of normal, with only the North Coast and Lahontan area exceeding 50 percent of normal for the period.

Forecasts of April through July runoff call for 45 percent of normal flows for the Sacramento Valley and 30 percent for the San Joaquin Valley. Most of the Central Valley river basins have a forecasted runoff near the 1931 April through July runoff, with the American, Mokelumne, Stanislaus, Tuolumne, Merced, San Joaquin, Kaweah, and Kern Basins forecasted within 6 percent of the record April through July low flow set in 1924.

Reservoir storage is considered adequate for basic needs in most areas, with about 90 percent of average storage available to the state from the 143 res-

ervoirs monitored. In the San Joaquin Valley reservoir storage is just average for this date, and in the Sacramento Valley storage is 80 percent of average. It is now likely that this season's use of stored water will result in near minimum carryover supplies for next season in most reservoirs.

ALASKA

Heavy month-ending storms dramatically increased the snowpack in many of Alaska's watersheds. The largest increases were recorded just east of Anchorage where 7 1/2 inches of new moisture, three times the normal monthly increment, were recorded. Other areas heavily hit were to the southeast and along the eastern edge of the state.

Forecasts of streamflow during the April through July period have increased statewide from predictions made a month ago. Snowmelt runoff from the Anchorage area is now expected to be above normal. The Fairbanks area and Yukon River improved only slightly, however, and is still well below normal.



EXPLANATION of STREAMFLOW FORECASTS

All flows are observed flows except as adjusted for: 1/ Storage change in Lake Sherburne. 2/ Storage change in Lima and Clark Canyon reservoirs. 3/ Storage change in Hebgen Lake. 4/ Storage change in Gibson Reservoir and measured diversions. 5/ Storage change in Two Medicine, Four Horns, Lake Francis and Swift reservoirs. 6/ Storage change in Canyon Ferry and Tiber reservoirs. 7/ Changes as indicated in (6/), (8/), plus storage change in Fort Peck. 8/ Storage change in Boysen, Buffalo Bill, Bull Lake and Yellowtail reservoirs. 9/ Storage change in Buffalo Bill Reservoir plus Heart Mountain diversion. 10/ Storage change in Pilot Butte and Bull Lake reservoirs plus Wyoming canal diversion.

11/ Changes indicated in (10/) plus storage change in Boysen Reservoir. 12/ Plus diversions to Cache LaPoudre. 13/ Plus by-pass to power plants. 14/ Minus diversion thru Gumlick Tunnel. 15/ Storage change in Price Reservoir. 16/ Minus diversions from North Platte, Laramie and Colorado rivers plus measured diversions above station. 17/ Storage change in Clear Creek, Twin Lakes and Turquoise reservoirs minus diversions from Colorado River. 18/ Storage change in Rio Grande, Santa Maria and Continental reservoirs. 19/ Storage change in El Vado and Abiquiu reservoirs. 20/ Storage change in Platoro Reservoir.

21/ Storage change in Grandby Reservoir as furnished by U.S.B.R. plus diversions by Adams Tunnel and Grand River Ditch. 22/ Changes as indicated in (21/) plus diversions thru Roberts, Gumlick and Moffat tunnels and storage change in Dillon, Homestake, Williams Fork, Green Mountain and Willow Creek reservoirs. 23/ Changes indicated in (22/) and (26/). 24/ Storage change in Blue Mesa Reservoir. 25/ Changes indicated in (24/), (30/) and (35/) and storage change in Lake Powell. 26/ Diversions to Arkansas River plus storage change in Ruedi Reservoir. 27/ (Inflow record as computed by U. S. Bureau of Reclamation.) 28/ Storage change in Taylor, Blue Mesa and Morrow Point reservoirs. 29/ Storage change in Fontenelle Reservoir. 30/ Storage change in Flaming Gorge Reservoir.

31/ Plus diversion through Duchesne Tunnel. 32/ Storage change in Moon Lake Reservoir. 33/ Storage change in Scofield Reservoir. 34/ Storage change in Joe's Valley Reservoir. 35/ Storage change in Navajo Reservoir. 36/ Plus U. P. & L. Co. tailrace and Logan, Hyde Park and Smithfield canals. 37/ Minus diversions thru Duchesne Tunnel and Weber-Provo Canal. 38/ Storage change in Lake Tahoe and Boca reservoirs (Forecast by Truckee Basin Committee.) 39/ Storage change in Bridgeport Reservoir. 40/ Corrected for major upstream impairments -- represents simulated natural flow conditions.

41/ Storage change in Priest Lake. 42/ Storage change in Coeur d'Alene Lake and diversions by Spokane Valley Farms Co. and Rathrum Prairie canals. 43/ Storage change in Lake Chelan. 44/ Storage change in Jackson Lake. 45/ Storage change in Jackson Lake and Palisade reservoirs. 46/ Storage change in Jackson Lake, Palisades, Island Park, Henry's Lake, Grassy Lake plus diversions between Heise and Blackfoot. 47/ Storage change in Henry's Lake and Island Park reservoirs. 48/ Storage change in Mackay Reservoir and diversion in Sharp Ditch. 49/ Combined flow Big Wood near Bellevue and Camas Creek near Blaine. 50/ Storage change in Arrowrock, Anderson Ranch and Lucky Peak reservoirs.

51/ Storage change in Wild Horse Reservoir. 52/ Storage change in Cascade and Deadwood reservoirs. 53/ Storage change in Keechelus, Kachess and CleElum reservoirs plus diversion by Kittitas Canal. 54/ Changes indicated in (52/) plus storage change in Bumping and Rimrock Lakes plus diversion by Roza, Union Gap, New Reservation, Old Reservation and Sunrise canals. 55/ Storage change in Bumping and Rimrock lakes and diversions by Tieton, Selah Valley, Wapatox canals and City of Yakima. 56/ Storage change in Merwin, Yale and Swift reservoirs. 57/ Storage change in Mayfield Reservoir.

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